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ABSTRACT

The costs of education continue to increase, despite education's uncertain effectiveness in curing social and economic ills. A wise cost and resource allocation policy can help control runaway educational spending, but cannot bridge the widening gap between educational costs and funding. State support of education is required on two grounds: economic efficiency and social equity. Though education benefits those who receive it more directly than those who pay taxes for it, the amount of that benefit which returns to the state and to the society must be considered when determining the proportion of educational costs to be borne privately. Although the proportion of these costs borne by the public seems to be growing, equal educational opportunity remains elusive. The impact of the redistribution of wealth through public educational subsidies, including tuition-free elementary and secondary schooling and student aid plans for higher education, awaits fuller analysis. Human capital theory fails to take account of the impact of this redistribution on those not educated. Consideration of the full range of economic issues in educational finance confirms that the most important problem is determining the most beneficial mix of public and private support for each level of education for each population group. (Author/PGD)

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THE FINANCING OF EDUCATION: AN EXAMINATION OF BASIC ISSUES

This paper deals with a number of issues in the field of education finance. The escalating costs of education in recent years give these problems a special importance and urgency, particularly in less developed countries.

The nature of education as a semi-public good together with its implication for finance are discussed. The case for a mix of private and public finance for education is made, and its income distribution effects are examined. Due consideration is paid to alternative ways of financing education such as student loans, modifications of the tax system and the role and limitations of the private education sector.

The present paper is part of a research program carried out by the Education Department (Central Projects Staff) on education finance in Latin America. It is to be followed by a set of country case-studies, each of them illustrating one particular aspect of the financing of education as described in the present paper.

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THE FINANCING OF EDUCATION: AN EXAMINATION OF BASIC ISSUES

I. Introduction

Concern about an eventual crisis in the financing of education is currently expressed by many observers and, sometimes, by education authorities themselves in both developed and developing countries. While it was a particular feature of the sixties to welcome the drain caused by education expenditures on public finance, a shift of attitudes can already be perceived among a number of researchers and policy-makers for whom high spending on education is no longer held as a panacea for economic growth and social development. This change in attitude towards education spending results from various factors such as the soaring trends observed during the last fifteen years for this type of expenditures, uncertainties about the role of education in the development process and the emergency of new sectors competing for public funds.

Everything has already been said about the size of public education expenditures in developing countries. Roughly speaking, between 15 and 20 percent of the public budget is spent on education in a "typical" developing country. In Africa, some extreme cases where this proportion reaches 25 percent or more can be found. Public expenditures on education absorb between three and five percent of GNP in most developing countries. Moreover, it is a fairly general rule that the rate of increase of these expenditures is superior to that of total public expenditures which is, in turn, superior to the rate of increase of GNP. As a consequence, the share of education expenditures in both the budget and GNP will continue to increase at a steady rate in many countries and there seems to be little chance that these trends, resulting from an ever-increasing demand for education as well as upward pressures on unit costs, will level off in the future. This situation contributes to feed the suspicion held by some observers that the growth of educational expenditures is indeed largely uncontrolled.

Uncertainties about the economic role of education also contribute to create some disenchantment vis-a-vis high spending on education. The two economic arguments, traditionally brought forward to justify it, namely the scarcity of skilled manpower and the high return on human capital investment, are now questioned. In the first place, as a result of educational expansion, not only is skilled manpower less scarce than before but educated unemployment and brain drain have emerged as major issues in many developing countries, thus raising doubts about the urgency of more educational growth. Secondly, the technical shortcomings of rates of return calculations for education have aroused widespread skepticism. Moreover, their inability to cope with broader issues, such as the influence of education on income distribution or social mobility and externalities, has reenforced attitudes of disdain towards their use in the decision making process.

Another powerful factor militating against the unquestioned priority granted so far to education is to be found in some new areas, such as health, population, nutrition or urban development, which are now emerging as important consumers of public funds. Their claim that they, too, contribute to economic growth cannot be dismissed easily and they may prove to be tough competitors in the race for public funds in the very near future.

To sum up, the feeling that education has received more than its "fair share" during the past decade should not be underestimated when examining the future prospects of the various sectors competing for public finance. Educational expenditures are no longer the "sacred cow" that they use to be. An eventual reordering of priorities may well create a serious financing problem which is worth considering before its occurrence.

Various policies are currently proposed to alleviate the shortage of finance for education. One of them consists in raising the low productivity of educational systems so as to achieve substantial reductions in unit costs. It is a fact that, in the education sector, inputs per unit of output (student) are high and, unlike in other industrial sectors, show no sign of decreasing; rather the reverse. Another distinctive feature is the paramount importance of labor costs which account for 60 to 95 percent of total costs according to the level or type of education considered. Clearly, substantial savings could be derived from a better utilization of teaching techniques and devices. However, the trend towards a more capital-intensive education sector has, so far, been counter-balanced by a powerful trend towards a better quality of educational outputs; and this requires more capital and more labor. A glance at the international scene shows that, in rich countries, the labor share in educational costs is smaller, while the total costs per student are higher than in poor countries. In other words, although it is theoretically sound to seek the replacement of expensive teachers by cheap teaching devices, we are witnessing a situation in which costs for students keep increasing as their capital component increases.

If progress in the productivity of education is difficult to achieve, another way of lowering the total education bill would be to reallocate the resources of the education sector from high-cost to low-cost types or levels of education. There is certainly room for maneuvering here given the huge differences recorded among unit costs: broadly speaking, the cost of a student at the university level may vary from five to fifty times the cost of a pupil enrolled in primary school; formal technical education is usually far more expensive than on-the-job training; unit costs in adult education, rural education and correspondence courses will also be different although available statistical evidence is scarcer here.

However, a policy aiming at reallocating students from high-costs to low-costs types of education, if theoretically possible, is

difficult to put into practice for two reasons: first, it would run head-on against the internal dynamics of the formal education system which imply an increasingly important shift within total enrollments towards higher, more expensive levels of education and, therefore, higher outlays of educational resources. Secondly, low-cost education is very often associated in the mind of the public with low economic and psychic benefits. Right or wrong, these attitudes are, among other things, responsible for numerous failures in the field of informal education. Rural education, for instance, when set up as a cheap substitute for urban traditional education is very often perceived by rural populations as second-best education and a stepping-stone to further schooling in town. This is true even when the vocational component of the curriculum has been increased so as to make it more palatable to the rural clientele. Rural schools are, in fact, successful as long as there is no schooling alternative around. But they are deserted by their clientele as soon as some kind of formal, urban education is made available to them. Broadening the argument, it can be said that, even if the supply of informal education was developed in such a way that it could represent a viable alternative to formal education, the ultimate decisive factor will always be the rewards, both economic and psychological, granted by society to each system. To sum up, the practical obstacles faced by a policy aiming at reallocating resources from high-cost to low-cost education appears to be so formidable that it is hard to see how such a policy could yield results in a foreseeable future.

The foregoing remarks do not disregard the usefulness of a wise cost and resource allocation policy. They only imply that, in the present context, such policies will fail to bridge the gap between expenditures and finance. A stronger medicine is, in fact, needed.

If there is little hope to achieve major savings by reducing unit costs, can one expect that the demand will level off in the near future so that a financial crisis can be avoided? The appropriate answer to this question seems to be an unqualified "no". First, in spite of a decade of educational planning, it is fair to say that educational growth is, in most countries, a largely undisciplined growth. Very seldom have planners' guidelines been implemented. In too many cases, these guidelines, whether based on sophisticated manpower requirements or on an evaluation of the returns from education were too narrowly economic from the social point of view, thus failing to give full consideration to the incentives to acquire more education that are built in nearly all societies. Whether these incentives are purely "economic" such as the higher earnings attached to better education, or whether they are more "cultural" as witnessed by these universal attitudes which make parents want more education for their children than they had themselves, is a rather academic debate. Both types of incentives are probably the two sides of the same coin. The important lesson is that the "propensity to study" has proved to be stronger than all the guidelines or priorities set forth by the planners.

To sum up, the prospects for a slowing down of educational expansion or for a decrease in unit costs are dim. Consequently, the probability of financial crises here and there are increasing.

Another aspect of the problem, so far left aside, is the drain created by education on private finance. In some countries, the supply of tuition-free primary or secondary education is so restricted that a parallel system of fee-paying education is set up to complement the free system. Even when education is provided to families free of charge, expenditures on transportation, uniform, meals and the like as well as the incomes foregone by the children who are attending school do represent a financial burden that cannot be ignored. The poor progress made throughout the world towards more equality of educational opportunities seems to indicate that both these expenditures and this foregone income are significant obstacles on the road towards educational participation in many social groups. In that sense, there might be a crisis in private finance for education as well.

All the foregoing suggests that there is such a thing as an education finance problem and that this problem is not an intellectual mode that will disappear as quickly as it has emerged. Although there are various ways to deal with the subject, the approach adopted here will be deliberately down to earth. No attempt will be made to design an "ideal" financing scheme for education. On the contrary, the analysis will, to a considerable extent, rely on actual situations in the developing world though occasional examples from industrialized countries may be put forward to reenforce the argument.

As in any debate on financing, efficiency and equity issues are intertwined. However, the emphasis will deliberately be put on the equity aspects of education financing for two reasons: first, it is felt that, in spite of their claims, economists have not that much to say on the efficiency aspects because education is not a pure economic good. Certainly it would, theoretically, be possible to concentrate on these aspects, but such a partial approach is of little help if it is to be used in a decision-making process which, implicitly, or explicitly, does grant a paramount importance to the equity aspects in the shaping and the reforming of education finance systems. The second reason is that equity aspects have been, so far, largely neglected in the literature on education finance, thus creating some confusion around their importance and their limitations as well.

The analysis is centered around the question: Who pays for education? A first, rather obvious answer to this question consists in saying that the costs of education are usually shared by the students or their parents and the "state" -- that is the taxpayers. Although there are some cases where 100 percent of the costs are financed by either public or private funds, this is a fairly general arrangement with far-reaching consequences in terms of equity and efficiency. The theoretical rationale for such an arrangement and its implications for education financing are given in Section II.

II. Public versus Private Finance for Education

The purpose of this section is to describe in general terms the economic characteristics of education as a good and their implications for finance. The starting point is that education is neither a public nor a private good, neither a consumption nor an investment good but, rather, a mixture of the four.

1. Education as a Semi-Public Good

Education does not fit easily into the classical dichotomy between private goods (which are produced by private enterprise) and public goods -- the financing of which rests on governments. Traditionally, the justification for government intervention in the procurement of goods has been the presence of externalities. This means that the benefits from such goods do not accrue individually or separately to the individuals but, rather, indivisibly to society as a whole. In other words, such goods are not approbiable by individuals and one person's consumption of those goods does not adversely affect another person's consumption of the same goods. Obviously, if public goods are not appropriable, they cannot be purchased and private enterprise is not going to produce them simply because it cannot sell them. National defense is the best example of a collective or public good.

However, externalities yielded by public goods may be only partial in the sense that, although society as a whole or some groups in society derive benefits from the consumption of those goods, individual recipients benefit as well. In other words, those goods are partially appropriable and one individual's consumption of those goods may hamper another individual's consumption. Because individuals usually adjust their purchases according to the direct benefits they receive, thus neglecting externalities, additional government finance is necessary to achieve optimal allocation of resources.

This is clearly the case of some welfare expenditures such as education and health. The traditional economic argument for providing public finance for education is, in effect, that not only individuals but also society or some sub-groups in society derive benefits from the consumption of education. In addition, most societies believe that the collective benefits exceed those accruing to individuals. Since education is "indivisible" and since private individuals have no economic incentive to pay for more than their expected private benefits, public subsidies are necessary to avoid under-investment from the point of view of society.

Government intervention in the procurement of education can thus be justified on the grounds of economic efficiency alone. However, once the principle of subsidized education is accepted, the problem of determining the extent of government intervention remains to be solved. In theory, the relative contributions of public and private finance to education should depend on the magnitude of the expected benefits, both economic and psychic, accruing to each party. The trouble, however, is that these benefits are not easy to measure. Considering the economic benefits first, while we can (more or less) determine the extent to which

national income will grow as a result of an increase in the amount of knowledge and skills embodied in the labor force, other "indirect" benefits are not quantifiable in the existing state of our knowledge. This is the case of the spillover effects in society due to inventions or advancements in scientific knowledge made by highly educated people. Even if the existence of both individual benefits (financial rewards, prestige) and social benefits -- if for instance, the invention has immediate implication for large groups of society -- are recognized, it is hardly possible to draw between the two, a line that could be used for determining the respective shares of public and private funds to finance advanced education. If one turns now to the non-economic benefits, there are simply no techniques available to quantify either the private benefits of education such as a more sophisticated cultural life, or its social benefits such as the development of a well-informed electorate or the transmission of aesthetic or cultural values.

Thus, because it has proved difficult, if not impossible, to quantify these benefits, decision concerning the financing of education are, in practice, political decisions which reflect the preferences of society and the "value" granted to externalities. These preferences need not be similar in all societies; they may also change with time within a given society; they may be different according to the level of education considered. As a consequence, nearly any kind of cost-sharing arrangement between the taxpayers and the consumers of educational services can be devised.

The discussion has, so far, been restricted to the efficiency argument. But the case for state subsidies for education becomes stronger if the equity issue, namely the question of the distribution of educational opportunities, is considered. It is a widely acknowledged fact that the consumption of education, unlike that of many other goods, public or private, has important implications for the distribution of income. Although the relationships between education and income are far from being thoroughly elucidated, education does enhance the earning capacity of those who receive it. If education were priced to the public at its full cost, as it would be in the absence of any public subsidy, only those who can afford it would buy it. As a consequence, the existing inequalities of income would determine similar inequalities in the consumption of education which would, in turn, foster future income inequalities.

Historically, the importance of these income-redistributive implications of the consumption of education was recognized as early as 1860 in a few European countries when the state stepped into what was so far a private territory if not a church's territory. In modern times, these income redistributive effects of education provide the rationale for student aid policies, the purpose of which is to remove financial barriers to education participation for selected groups of beneficiaries. These policies require a decrease of the students' contribution to the costs of their education and a corresponding increase of the taxpayers' contribution.

To sum up, public finance for education is required on two grounds: economic efficiency and social equity. However, to acknowledge this does not help very much to determine the extent of public involvement in education finance. At the same time, the public financing of education generates income transfers as the individuals who benefit from subsidized education are not necessarily the same as those who pay the taxes that go for education. This income-redistributive effect should be considered when trying to determine where to draw the line between public and private financing for education.

2. Education as a Consumption versus an Investment Good

If education were only a semi-public consumption good, partly financed by the taxpayers, the problem of its financing would amount to drawing the line between its "direct" price to be charged to the recipients of education and the "tax price" that society is willing to pay. The former has, together with incomes, an obvious impact on the demand for education and the distribution of educational opportunities. The latter contributes to shape the supply of educational services. However, these "prices" are usually considered as the cost side of an investment which, in the long run, will yield economic returns to both consumers under the form of higher earnings and the state under the form of higher taxes. These public and private benefits should be given due consideration when attempting to define an appropriate mix of public and private finance for education.

In the first place, the private demand for education will not so much be determined by the "direct price" of education but, rather, by the private rate of return from the education investment. Thus, an individual facing the choice between a publicly-supported, low cost educational institution and an expensive, private school may not necessarily select the first one if he thinks that the returns from private education will exceed those of public education in such a way that the difference in costs is offset.

Secondly, the public benefits from education will allow the state, i.e., the taxpayers, to receive back in the form of increased tax revenue from educated people (part of) the money spent in subsidies for their education. In many developing countries, governments have an obvious benefit in trying to bring larger and larger masses of people into the wage-earning, taxpaying segment of society. Given the low average income in these countries, subsidized education might be a pre-requisite for it.

Clearly, the extent to which the incomes of those who have received a subsidized education are, later, reduced by taxation must be interpreted as an attempt of society to achieve a lower "price" for externalities and equity. Here too, in the absence of any quantitative measure of externalities and equity, the decision is usually a political one. However, such a decision always involves income-redistributive aspects which are worth considering. The question is whether or not the taxpayers subsidize all social groups in society to the same extent, and if not, what is the rationale for different amounts of subsidy which is

defined here as the public subsidy received by each social group at the time when education is provided minus the additional taxes generated by the additional lifetime income accruing to the educated people in the same social group.

This impact of the public financing of education on the distribution of income is obviously different from the one which arises at the time when public education is provided. It has to do with the long-term, intergenerational effects of the burdens and benefits of education on the various social groups. Such an approach is required to take care of the fact that the costs of education are borne by a generation while the benefits accrue to another.

3. Implications for Education Finance

The foregoing considerations will help to specify the various and interrelated aspects of the financing of education. The first problem has to do with the income-redistributive aspects of public expenditures on education. It can be dealt with by raising two questions, namely, "who pays for education?" and "who receives education subsidies?": this will be done in Section III.

Section IV will review the general case for student aid policies whose ultimate purpose is precisely to alter the existing mix of public and private finance for selected groups of students or fields of study. Although these policies rarely question the principle of government intervention in the procurement of education, they sometimes provide a rationale for altering the existing cost-sharing arrangements between taxpayers and consumers in one direction or another.

The long-term impact of public investment in education on the distribution of income will be dealt with in Section V. Private education is another important exception to the general arrangements governing the financing of education. The classical debate between public versus private education finance is too often couched in rather academic terms. The practical implications of the coexistence of private and public education for efficiency and equity will be reviewed in Section VI.

III. Who Pays for Education?

In the preceding section, it was noted that educational costs are traditionally met by a mixture of public subsidies and private contributions in varying proportions. It might be worth repeating here that the size of public subsidies to education is usually determined by a political decision reflecting society's preferences, and this is so largely because economists are not in a position to assign a "price" to the externalities of education and to the problem of equality of opportunity. However, some clues can be gathered from past trends and present situations throughout the world.

1. School Fees versus State Subsidies

In many countries, the system of tuition-free education at the primary and secondary level is common place. This widespread financial arrangement consists in letting the public bear the bulk of instructional costs, that is all the costs related with instruction (school building and maintenance, teachers' salaries, etc.), while the recipients of education or their families meet the costs of books, transportation, uniforms and also opportunity costs such as foregone earnings. A point of order concerning foregone earnings is indeed necessary. They do represent a cost of attending school which may be quite substantial in many families where children incomes are not a negligible part of total family income. However, the common practice of considering as earnings foregone by students the average earnings received by non-students already on the job market probably leads to over-estimate these foregone earnings and, as a corollary, under-estimate the relative importance of state subsidies in the financing of educational costs. This is so because a possibly large part of the students population does not actually forego work opportunities and the earnings attached in order to pursue their studies: even if they were not studying, they would not be working simply because they would not find jobs that suit their expectations. As a general rule, one can say that the difference between non-students' earnings and actual earnings foregone by students will be the larger, the greater are the differences in socio-economic background between the student and the non-student populations.

An important exception to the tuition-free system of education is, of course, the private, fee-paying education sector whose importance must not be underestimated. The importance of fees as a source of finance vary widely among countries. They may cover the full costs of instruction and even more in some Asian countries where education is considered as a profit-making activity: the Philippines and, to a lesser extent, Japan are good examples of this situation. In many cases, however, fees will not cover the full costs of instruction; state subsidies and private donations will make up for the difference. There exists only scattered evidence on these two sources of finance. In Colombia, for instance, state subsidies, which may take various forms such as tax reliefs, direct grants, teachers assigned to private schools while on government payroll and fellowships, are estimated at about ten percent of the ministry of education outlays for primary and secondary education. The private schools of the federal district of Mexico derive about 87 percent of their income from fees and the remaining from private donations, while state subsidies are negligible there.1/

While the importance of school fees as a private source of finance is hard to assess, it can be safely assumed that it is linked

1/ See Estudios Sobre las Escuelas Particulares del Distrito Federal by Carlos Munoz I. and Manuel I. Ulloa, Centro de Estudios Educativos, Mexico, 1966.

with the proportion of total enrollments in the private sector. In most countries this proportion has been steadily decreasing in the past and, most probably, will continue to do so as educational participation increases, particularly in rural and urban working class areas where the network of private schools is looser than elsewhere.

At the higher education level, the situation is more complex. In many countries, state subsidies will cover only a part of instructional costs and the remaining fraction will be met by the students under the form of fees or by the universities themselves thanks to research grants, donations, endowments, etc. How important are the fees relative to instructional costs is hard to say. In the United States, the fees paid by the students amounted to 22 percent of universities' current income in 1966.1/ In most continental Europe there are only very small fees if any and, although no data are available, it is hard to believe that they provide for more than five percent of universities' income. In Colombia, the fees which vary according to students' family income in some universities, represent about 20 percent of universities' income in 1970.2/ In Africa, the traditions inherited from colonial powers still prevail: universities in French speaking countries do not charge any fees while they do so in many English speaking countries. It is also worth observing that, in some countries where the tradition of fee-paying education is well accepted, the proportion of fees in universities' income (or expenditure) has been decreasing. In Canada, Province of Ontario, fees account for 27 percent of universities' expenditures in 1965 as against 32 percent ten years before.3/ In the United Kingdom, universities derived about eight percent of their income from fees in 1968, as against ten percent in 1962 and 27 percent in 1938.4/

Fees are, of course, a much more important source of finance in the private education sector than in the public education sector. In the United States, private universities derive 35 percent of their income from fees as against ten percent in public universities. In some developing countries, the difference is even higher: 62 percent in the private sector as against five percent in the public sector in Colombia. Thus, public universities seem to be more "public" and private universities

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1/ See "Social Goals and Federal Support of Higher Education - The Implications of Various Strategies" by Alice M. Rivlin and Jeffrey H. Weiss in The Economics and Financing of Higher Education in the United States, A Compendium of Papers submitted to the Joint Economic Congress of the United States, U.S. Government Printing Office, Washington, D.C., 1969.

2/ See Reforma de la Educación Superior, Documentos de Estudio, ICFES Instituto Colombiano para el Fomento de la Educación Superior, Bogota, Julio 1971.

3/ See Table 14, page 13 in Report on Student Financial Assistance Programs by Gail C.A. Cook and David. A.A. Stager, Institute for the Quantitative Analysis of Social and Economic Policy, University of Toronto, Toronto, November 1969.

4/ See Table 18 in Higher Education, Report of the Committee appointed by the Prime Minister under the chairmanship of Lord Robbins, 1961-63, London, Her Majesty's Stationery Office.

more "private" in developing countries than in developed countries. In other words, there seems to be more diversity in sources of finance in the latter than in the former. However, exceptions to this rule are numerous particularly in the industrialized countries of continental Europe where the sharp dichotomy between private and public universities has been preserved.

The actual importance of fees as a source of finance is even smaller than stated in the preceding paragraphs due to the often very extensive student aid policies adopted in many countries. A case in point is the United Kingdom where close to 80 percent of the students population will pay their fees in full thanks to grants provided by the government or local authorities. The students' own contribution to instructional costs is, in fact, considerably smaller than the eight percent mentioned above. The British system is, nowadays, in force in most developing English speaking countries. Student aid policies that take the form of subsidized loans have the same effect. The students who borrow to finance their studies receive a below-the-market interest rate which is equivalent to a subsidy from the government for participating in the program. In the United States, it was found that the federal government has to put a one-dollar subsidy for each four dollars lent to a student under the provision of the two main loan schemes functioning in this country in 1967.[1/] In many Latin American countries where loan schemes have been recently launched, the public subsidy component of student loans will be much larger because of the larger difference between the interest rates charged to students and market interest rates.

To sum up, it is correct to say that school fees have, if present trends continue, a dim future as a source of education finance. This is due to a number of factors such as the tuition-free policy maintained in the public education sector, the decreasing relative importance of the private education sector and the emergence of subsidized student aid policies. As a consequence, the share of state subsidies in education finance will, in all likelihood, increase. In terms of efficiency, such a trend implies that societies put a great value on the external benefits of education and on a more equal distribution of educational opportunities which, it is believed, can be achieved only through subsidized education. If that were not the case, governments would obviously be wrong to allocate so much public money to education in order to make it cheaper for consumers. In terms of equity, this ever increasing taxpayers' contribution to education has important implications which are spelled out below.

2. Public Expenditures on Education and Income Distribution

Two observations, both of them related to the equity issue, can be made in connection with the growing role of government involvement in education finance as a corollary of tuition-free education. The first one

1/ See Robert W. Hartman, Credit for College, Public Policy for Student Loans, McGraw Hill, New York, 1971.

consists in saying that, although tuition-free education may have done much in the past for spreading education in all segments of society, it has proved powerless to achieve a genuine equality of educational opportunities. One reason is, of course, that tuition-free education does not mean zero-cost education and that even the remaining private costs cannot be met by low-income groups in many countries. The second observation has to do with the fact that free education provided to everyone regardless of income levels may prove to be an unnecessary and, sometimes, handsome subsidy to high income groups who can afford to pay at least part of their educational costs.

In short, free education is "not enough" for the poor but probably "too good" for the rich. To be sure, this point could be made in any system of finance by which education is priced equally (even if the price is not zero) to everybody regardless of income inequalities.

The need to go "further" than free education for the poorest strata of society by subsidizing students' maintenance expenditures, for instance,[1/] is no longer questioned. But the point made that free education may not be socially justified for high income groups is hotly disputed. The counter-argument is to say that higher income groups are also entitled to free education simply because they pay the largest part of taxes that go for education (as well as for other public services).

Right or wrong, this claim implies that public finance for education serves as a means to redistribute income from those who pay for education and those who receive subsidies because they do not pay for the full cost of their education. Hence, the need to inquire as to who pays for the subsidies: the taxpayers, of course, but which taxpayers? Are those who receive subsidies the same as those who pay taxes? Do some people receive without paying or pay without receiving? If so, public finance for education is a vehicle for redistributing income. In which proportions? In which directions?

a. Who Pays the Taxes?

In most countries, public subsidies to education are financed out of the government general revenue, the bulk of which is raised through taxation. While the central government is often the sole provider of funds, local governments may also channel public funds towards education. Those funds are either central government funds transferred to local governments for this particular purpose or local government revenue raised through local taxes. In all cases, the origin of the fund is the taxpayer.

1/ Or by providing them with a compensatory and probably more expensive education.

Comprehensive studies on the incidence of taxation are scarce. In spite of their obvious interest which go far beyond the present study, professional economists have a tendency to stay away from such studies, thus leaving politicians and journalists arguing in a vacuum on the degree of progression (or regression) of a given tax system. The need for such studies is even greater in developing countries where income inequalities are large and the search for equity through taxation, supposedly, more urgent.

The most frequently heard argument against tax incidence studies is that they are, to a certain extent, meaningless because of tax shifting. In other words, those who pay the taxes may shift the burden to other persons; consequently tax payments have little to do with actual tax burdens. A well known example is the corporation income tax, whose burden will ultimately fall on consumers, shareholders and workers in unknown and varying proportions. These difficulties should not be underestimated; they require that very clear hypotheses be made for the incidence of each tax. This being said, tax policies and reforms have so pervasive and far-reaching equity effects throughout the economic and social fabric that they cannot be left aside until the hypothetical time when one knows everything about them. In addition, they are an integrant part of the day-to-day decision making process, and should be given due consideration for this single reason.

To be comprehensive, tax incidence studies must deal with all the major taxes, including indirect taxes which are often the most important source of public revenue in developing countries. Once income groups are defined, taxes will be allocated among them on the basis of <u>actual</u> payments, that is, income taxes after deductions and exemptions, and indirect taxes on the basis of actual consumption of taxed items by income group. The basic sources of information for the allocation of tax payments to the various income-groups will thus be the income tax returns filed by the taxpayers for direct taxes and, for indirect taxes, a detailed household survey of incomes and expenditures pattern. The tax paying unit considered will be the <u>family</u> since the recipients of the subsidies (the children) having no income, do not pay taxes.

The ultimate outcome of tax incidence studies is to yield the total amount of tax payments made by each income groups and the resulting overall taxation rate.

b. <u>Who Benefits from Education Subsidies</u>?

Public subsidies for education, financed by all taxpayers, benefit those families with children enrolled in all the subsidized schools of the education system. Because schooling is not evenly distributed among socio-economic groups (defined by family income, father's occupation or other relevant proxy variables), it is unlikely that these subsidies are equally distributed among income groups. To be sure, educational participation and attainment are

positively associated with socio-economic origin, which means that children with a favorable socio-economic background are enrolled in greater proportions and remain longer in the education system than their less privileged counterparts. This is particularly true at the upper levels of the education system where precisely the cost of education and thereby the public subsidy per pupil are particularly high. In other words, because the public subsidy increases as working class participation in the education system decreases, higher income groups are probably more subsidized than lower income groups.

However, in spite of the higher subsidy to higher levels of education, primary education still absorbs between 50 and 70 percent of all public education expenditures in most developing countries. If lower social groups are much larger than the other social groups, and if they have larger families, a situation could arise whereby there would be, in absolute values, more lower-class children enrolled in primary education than middle or high-class children and this, in spite of their lower enrollment ratios. The total subsidy received by those groups could be bigger than the one received by more privileged groups, but would still be smaller on a <u>per capita</u> basis.

It is thus very likely that high and middle class families reap a larger proportion of the public subsidies granted to education or, at least, a larger proportion than entitled to by the proportion of their children in the school age population. This hypothesis, however, must be seriously qualified in countries where a significant proportion of children from higher income groups are enrolled in private schools. Obviously, these children will receive education subsidies only to the extent that private education is subsidized by the state.

c. <u>The "Net" Redistributive Effect of Public Subsidy to Education</u>

The final step will attempt to compare the tax payments made and the subsidies received by each income group in order to assess the "net" income redistributive effect of public aid to education. Because the distribution of education subsidies is most probably regressive, that is "pro rich", the question will be whether or not the taxation system is progressive enough so as to offset the skewed distribution of education subsidies.

However, whenever education is financed out of general public revenue, a difficulty arises because there is simply no arbitrary way to decide which tax money and whose tax money go to finance education expenditure (or any particular expenditure). It is thus impossible to compute the actual transfers of income between income groups as long as <u>all</u> public expenditures are not considered. The comparison of benefits with taxes will have, therefore, to be made on the basis of the ratios of education subsidy received over <u>total</u> taxes paid in each income group, thus avoiding the determination of whose taxes finance education.

What can be inferred from a situation by which an income group A receives back 20 percent of its total taxes under the form of education subsidies while income group B receives only ten percent?

Three observations can be made: first, public aid to education is a vehicle for a transfer of income from B to A. Secondly, there exists the possibility of adverse and compensatory transfers from A to B through other public expenditure programs such as health, housing or transportation. And, third, supposing that this is the case, it remains to be proved that a one dollar transfer from B to A through public expenditures on education is identical to a one dollar transfer from A to B through, say, subsidized health care. In other words, do income transfers arising from all public expenditures cancel each other out in utility as well as in money? Insofar as both education and health have different long-term benefits, the respective rates of return of these two types of expenditures should help to provide an answer to this type of question. The crucial point would be here to determine which of the two is a more important determinant of future individual incomes.

Hardly any evidence at all is readily available in LDCs to give even the beginning of an answer to the question of the impact of public educational expenditures on the distribution of income. This is surprising because the technicalities of such an endeavor are far from being insurmountable.1/ In any case, attempts to go beyond the merely quantitative approach to education finance - as represented by the question "How much should government spend on education?" - and to include the redistributive impact of such public spending have long been overdue.

IV. Student Aid Policies

1. General

More recently, attempts have been made in many countries to alter the existing costs sharing arrangements between taxpayers and consumers of education for selected student populations or fields of study. Student aid polices are the usual vehicle for such a change. Whether they take the form of grants, loans, vouchers, student salary, free meals or transportation, these policies are bound to introduce some change in the mixture of public and private finance usually by increasing the share of public subsidy in total educational costs. In spite of their often limited coverage, these policies are worth considering because, by breaking the general finance arrangement, they usually introduce an element of progressivity in the pricing of education to individuals. This point is often missed in the literature which concentrates on the pros and the cons of the various modes of finance -- grants versus loans, vouchers versus free education, etc... -- without clearly spelling out their impact on the existing mix

1/ See "Public Expenditures on Education and Income Distribution in Colombia", by Jean-Pierre Jallade, April 1973, DRAFT.

of public and private finance. This has contributed to give a rather academic, if not confusing flavor to the discussions held on these subjects. A good example is the often-made case for student loans as a method of financing higher education. It will be reviewed below.

2. Student Loans: What Kind?

While student loans are often considered as the most sophisticated and appealing approach to the financing of education, the first question to raise is whether or not and to what extent loan schemes bring a change in the relative contributions of private individuals and taxpayers in total educational costs. Apparently, they do not, in as much as students borrow money to meet their existing private costs, which may or may not include fees, and as their repayments cover the actual costs of borrowing plus the administrative expenses incurred by the credit institution. In such "neutral" loan schemes, students have still to finance their portion of the costs and no savings of public funds occur. However, these schemes are not to be found very frequently. On the contrary, "non neutral" loan schemes aiming at altering the existing mix of public and private finance are the rule.

There are many ways to make a loan scheme "non neutral". The first one is, it seems, to subsidize the loans through below the market interest rates. This is inevitable as, in practice, the capital market is not adequately organized to finance education. Students lack adequate guarantee, they are too young and they need a grace period. Thus, there would be many practical reasons to deny them commercial loans supposing that they are willing to apply for them. The consequence of this state of affairs is that student loans are usually provided under government responsibility at below-the-market interest rates.

When provided without change in the rules governing the existing private and public contributions to educational costs, subsidized loans imply a redistribution of the cost-burden from consumers of education whose contribution will decrease by the size of the subsidy to the taxpayers whose contribution will increase accordingly. When loans are granted selectively to low or middle income students, which is the case in nearly all students' loan schemes presently operating in Scandinavia and Latin America, an income redistribution from taxpayers to those particular income groups takes place. It should be treated in the same way as the general case when educational costs are shared between taxpayers and consumers.

In terms of efficiency, a policy of subsidized loans has to be interpreted as an act of faith of society in the externalities yielded by education. It can also be used in a selective manner to make certain fields of study cheaper than others, thus conveying the belief that such studies are more "useful" to economy and society than others.

Examples of such loan schemes are the Scandinavian and Latin American loan schemes which have been launched without any attempt to raise the very low fees existing in these countries. Their outcome has been to increase, sometimes substantially, the taxpayers' share in the financing of education.

The discussion has so far been restricted to loan schemes that are launched without changing the rules governing the existing private and public contributions to educational costs. It is, of course, an entirely different matter when a loan scheme is established jointly with a rise in private costs as it would be the case if fees are increased or if they are introduced in a tuition-free system, or if the loan system were to replace an existing grant system. In this respect, the proposal made in the United States by Friedman[1] to charge full-cost fees and provide loans for nearly everybody amounts to restricting public finance for education to the size of the subsidy component of each loan. The proposals made in the United Kingdom to replace the existing grant system by a loan scheme would also result in an increase of private contributions since students would be expected to repay what they are presently receiving at no charge, with a corresponding decrease of public finance.

Needless to say this type of loan scheme relies on very different, if not opposite, attitudes towards the external benefits of education. In this case, externalities are believed not to be worth as much as implied by the existing size of public subsidy. It is interesting to note that one of the main arguments brought forward by supporters of such loan schemes has to do with equity. They believe that the financing of education through taxes entails a re-distribution of income from the non-users which are usually the "poor", to the users of educational services which are usually the "rich".[2] Then, they argue that the only way to get rid of this undesirable re-distributive effect is to remove the need for public finance by pricing education to individuals at its full cost. The impact of such a drastic increase in the private costs of education on the demand would be offset by a comprehensive and generous loan scheme in order to allow low and middle-income students to finance their studies.

These proposals can be criticized on two grounds: first, they make only passing references to the possibility of achieving an equitable system of finance through a more progressive taxation system.

1/ See Capitalism and Freedom, Milton Friedman, University of Chicago Press, 1962.

2/ This is, of course, a correct statement which is a recurrent theme of this paper, especially in Section III.

Such possibility is even dismissed out of hand in some circles[1] and the policy aiming at pricing education at its full cost, coupled with a loan scheme, is presented as the only feasible solution. In other words, two different issues are confused here: the first one has to do with the necessity of achieving an equitable system of education finance and the second one has to do with how to implement such a system, through taxation or direct pricing.

The second criticism is that such proposals rely on the unfounded assumption that attitudes towards student loans are not biased by socio-economic background. In other words, the only obstacle to be removed on the road to educational participation is lack of cash. If long-term financing is available, the propensity for long-term indebtedness is the same regardless of social origin. Should such an assumption be valid in industrialized countries, which is far from being proved, few policy-makers in the developing world are likely to buy it. Should it be proved that high class students are more inclined to borrow than their less privileged counterparts, student loan schemes, coupled with full pricing of education would run head-on against equality of educational opportunity. Some may argue that this point is valid for all loan schemes, including those involving more public finance for education, which is true. However, the consequences are more important here because the size of the loan which is to include, among other things, the full costs of instruction, will inevitably be bigger than in the case of a system where the taxpayers continue to finance a significant fraction of educational costs.

1/ An argument often invoked to dismiss progressive taxation as a remedy to the lack of equity in education finance has to do with public subsidies to US farmers. As Schultz puts it: "Surely economists would agree that the economic inefficiencies and gross inequities associated with the several billion dollars of federal funds allocated annually to US farmers cannot be remedied by increasing the progressivity of federal taxation. The same logic applies here to higher education. (See, "Optimal Investment in College Instruction: Equity and Efficiency" by Theodore W. Schultz in the Journal of Political Economy, Volume 80, Number 3, Part II, May/June 1972). Schultz's logic, however, may not look crystal clear to all economists, even less to policy-makers. The truth is that both cases have little in common. On the one hand, US farmers are a social group whose quantitative importance within American society is small and decreasing. This is why federal subsidies to such a group are inequitable and will be more so in the future since they will always be financed mostly by the larger non-farmers group even if federal taxation is made more progressive. On the other hand, more than half of the relevant age-group is enrolled in college education in the US and the trend is clearly increasing. In addition, all social groups benefit from subsidies to higher education though, admittedly, not to the same extent, while it is obviously not the case for subsidies to farmers. In addition, the ultimate goal is not to suppress all income transfers from non-users to users -- which can be achieved only if externalities are priced to zero, no public finance being, therefore, necessary -- but to make sure that the distribution of the tax-burden is roughly in line with the distribution of benefits.

To sum up, student loan schemes are rarely "neutral" with respect to the existing mix of public and private finance for education. Moreover, "non-neutrality" can go either way, towards less public finance and, consequently, higher private contributions as implied in Friedman's proposals and some recent British discussions, or towards more public finance and lower private contributions as implied by Scandinavian and Colombian loan schemes. So far, the preferences expressed by the societies concerned have pointed in the same direction: the former type of loan scheme has fallen short from being implemented while the latter type has been operating in Scandinavia and Colombia for fifteen years and is presently spreading over Latin America with the help of international agencies.1/

In a more general way, loan schemes are nothing but tools to implement the educational finance policy of a government in particular areas or for particular population groups. They should, therefore, be evaluated against the explicit and implicit goals of this policy.

3. Income Redistributive Effects of Student Loans

In the previous section, the analysis focused on the redistributive effects of student loans between consumers and taxpayers. However, student loans may have other kinds of income redistributive effects that are worthwhile to keep in mind when designing loan schemes. First, loan schemes affect the distribution of income across generations. In the absence of loan schemes, parents are expected to pay for their children's education, that is, in most cases, for more education than they have received themselves.2/ If loans are available to students to finance their private costs, this parental contribution is likely to disappear and be replaced by students' contribution out of their future private income. In other words, the immediate effect of a loan scheme will be to decrease the redistribution of income that usually goes on within families from older to younger generations. In a country such as Sweden, where loans are available to all students regardless of their family income, this has proved to be an overriding criterion in setting the provisions for a loan scheme. In developing countries, this redistribution of income across generation is considered as less

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1/ In the United States, the impact of the two loan schemes presently operating on the public versus private finance mix is not clear. On the one hand, both schemes are heavily subsidized but, on the other hand, increases of private costs (fees) which might have offset the trend towards more public finance, have taken place in the US higher education system. Another question mark is whether or not these increases have been made possible -- thanks to the existing loan schemes -- or whether they would have taken place anyhow.

2/ Understandably, parents' responsibility is more important at the lower levels of education than at the upper levels to which financing young adults may be expected to contribute.

important than parents' ability to pay which is, at least formally, the overriding criterion for loan eligibility.

Secondly, loan schemes have an impact on the inter-temporal distribution of students' personal incomes. Instead of concentrating their private contributions to education costs during their school years when they earn little or no income, students are able to spread their repayments over their economically productive years especially if the provisions concerning the grace and repayment periods are generous. However, the first productive years of an individual are usually also those during which his financial needs are pressing and few loan schemes allow for repayments to be made during the peak earning years of adult life. Although this would certainly be a step in the right direction, it is, in any case, hard to decide on the optimum lifetime distribution of education expenditures.

A third type of income redistributive effect may take place when the size of loan repayments is not determined by a uniform (subsidized) interest rate but is related to students' actual income. In such loan schemes, income is redistributed among borrowers within a generation by allowing repayments to be higher (or lower) than the amount of the loan according to the borrowers' higher (or lower) income. Such a provision can be easily built into a loan scheme by stipulating that borrowers repayments will represent a fixed percentage of their income during a certain period of time. This type of income contingent loan scheme is now operating at the Yale University in the United States.1/ Its income redistributive effects are nevertheless opened to question as participation in the scheme is voluntary and at least partially determined by students' expectations vis-a-vis their future incomes. Insofar as expectations are related with socio-economic backgrounds and fields of study, students from wealthy families or students entering very rewarding fields of study, have high expectations in terms of income and may, therefore, not be interested in participating in the scheme because high future incomes imply high repayments and, therefore, high, maybe above the market, interest rates.2/ On the contrary, students who are not sure about their future incomes, or who are not sure that they will have any income at all (women), will have a strong incentive to participate in a scheme which will then be considered as a kind of "insurance against under-the-average future incomes" or even against unemployment. Obviously, if many would-be participants expect to gain while few are willing to pay, the overall effect on the distribution of income is bound to be limited.

The foregoing considerations show that the effect of student aid policies on the price and the demand for education, on equality of opportunity or on the financing of educational institutions may vary

1/ Yale University: "Questions and Answers; The Yale Tuition Postponement Option", New Haven, Conn., July 1, 1971.
2/ To be sure, an opt-out procedure has been established in case repayments rise much beyond the costs.

largely according to their overall objectives and the kind of cost-sharing arrangements in which they are embedded. The problem, therefore, is not so much to debate academically about their potentialities which are very great indeed, but, rather, to submit them to a sort of system analysis, the main thrust of which would be to scrutinize empirically the ability of such policies to achieve the objectives which have been set forth for them.1/

V. Public Investment in Education and Income Distribution

The preceding sections described in general terms the implications for equity and efficiency of various mixtures of public versus private finance for education. The analysis was a static one, restricted to one point in time, namely when education is provided to the students. However, as it was noted in Section II, education can also be considered as an investment yielding long-term benefits to the recipients and society as well. Clearly, the distribution of the benefits from education should be given due consideration together with the allocation of the cost-burden between taxpayers and consumers when attempting to determine and, possibly, to alter the existing mix of public and private finance for education. Among the various benefits expected from investment in education, the economic returns are amenable to such a treatment because they accrue partly to the recipients under the form of higher earnings, and partly to the state under the form of higher taxes paid by educated people.

Because both the costs and the returns of investment in education are spread over time, it is essential to introduce an appropriate time dimension in the analysis. In the present section the returns are considered as streams of higher earnings or taxes occuring during the entire active life of educated people while the costs streams refer to the costs incurred over various years to complete a given level of education. Both streams are discounted at the same rate to the appropriate year.

Another distinctive feature of the present analysis is that the unit of observation is no longer family income as in the previous sections but the educated individual's income. The taxes that are referred to are no longer those paid out of family income when education is provided but those paid out of each individual's income during his active life. The subsidies are no longer treated as benefits accruing to families in exchange of family taxes but as subsidies to educated individuals that are (partially) repaid by them under the form of higher taxes during their active life.

1/ See my forthcoming paper on "Student Loans Policies: An Evaluation of the Colombian Performance", Jean-Pierre Jallade, August 1973.

1. Human Capital Theory and the Redistributive Effect of Public Investment in Education

It may be useful at this stage to clarify the differences between the approach described in the present section and traditional human capital theory.

The prime purpose of the theory of human capital and of its analytical tools - the private and social rates of return to education - is an allocative one. It seeks to elaborate signals that could be used to determine whether a country or individuals should invest more in education than they presently do and in what levels or types of education. The implications of this theory for the financing of education are to be found in the comparison between the private and social rates of return.

The private economic returns from investment in education accrue to the educated individuals in the form of a stream of additional after-tax earnings resulting from their better education. Individuals are supposed to compare these earnings with the private costs to be incurred to acquire additional education so as to be provided with the private rate of return of their planned investment in education.

The social economic returns from investment in education accrue to society in the form of the higher earnings (including taxes) of all individuals with additional education. These earnings differentials are compared with the total outlays, both public and private, required to pay for additional education so that a social rate of return of the investment in education can be computed.

According to the above definitions, the difference between the social and private rate of return consists, on the cost side, in the public subsidy to education and, on the benefit side, in the higher taxes paid by the educated people. Clearly, this difference reflects the overall position of the state, i.e., the taxpayers, vis-a-vis investment in education. The "net" taxpayers outlays for education will thus be equal to the total public subsidy for education minus the taxes paid by the educated people.

To what extent does the state get back in the form of an increased tax revenue from educated people the money spent in subsidies for their education? The answer is provided by the very numerous rates of return calculations carried out throughout the world. In nearly all countries, it was found that the social rate of return to education is lower, and sometimes a good deal lower, than the private rate[1]. Expressed in another manner, the proportion of private returns (after-tax earnings) over social returns (total

1/ See Returns to Education. An International Comparison by G. Psacharopoulos, assisted by Keith Hinchliffe, Elsevier Press, 1972.

earnings) is always higher than the proportion of private costs over total costs. This means that the public subsidies granted for the provision of education are always superior to the increased tax stream paid by educated people. In other words, the public financing of education always represents a "net" outlay for the taxpayers even when the public returns from education (taxes) are considered.

The fact that the state gets back under the form of an increased tax revenue only a fraction of the subsidies spent on education, should be justified in the same way as the provision of public finance for education. It is the expression of the belief that education yields a number of externalities that accrue to society as a whole. These externalities provide the rationale for the "net" public outlays for education (subsidies minus taxes positive) recorded in nearly all countries.

Clearly, any attempt to provide quantitative justifications aiming at altering an existing situation will be stalemated by the impossibility of quantifying these externalities. The often made suggestion of an additional tax on educated people's incomes, the final outcome of which would be to decrease the "net" public outlays for education if subsidies remain unchanged, is interesting in so far as it translates the belief that externalities do not, in fact, justify the present level of public aid to education. However, societies' preferences, as expressed in the political process, have so far run against the views of the promoters of such a tax.

The teachings of human capital theory concerning the effect of public investment in education on the distribution of income are less clear. While it is true that the average individual who invest in education is subsidized by taxpayers, the interesting question from an equity viewpoint is whether or not all population groups are subsidized to the same extent. The answer to this question is to be found, preferably, before taking any action towards, say, a decrease of the present public outlay for education if such action is not to have adverse effects on equality of education opportunity.

Rates of return calculations show, for instance, that the social rate of return to education for men is usually higher than the rate for women. This is so because, while the total costs of educating a man are roughly similar to that of a woman, male benefits (earnings) are usually superior to female benefits for the same level of education. The logical implication is that society should invest more in male education and less in female education. This is, of course, a stand that few people are willing to take because it would reinforce the already unfavorable level of female educational participation as compared to that of males. The same observations could be made for other social groups, such as blacks versus whites, urban versus rural populations, etc.1/

1/ See Gary S. Becker, Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education, NBER, New York, 1964.

Focusing now on the difference between the private and social rates of return in each social group as a measure of the subsidy granted to them by society, it can be observed that, surprisingly, women are more subsidized by taxpayers than men. This is so because while female education entails roughly the same private costs and public subsidies as male education, females receive lower earnings and, therefore, pay lower taxes than men. The "net" taxpayers outlay for each educated woman is thus higher than for each educated man. This is a rather baffling conclusion which implies that government involvement in the financing of education is a vehicle for discriminating against men and, possibly, that less taxpayers money should go for support of female education. This conclusion is obviously hard to reconcile with the fact that, in many parts of the world, educational participation of females is inferior to that of males. It also shows that rates of return calculations are not an appropriate basis to spell out the redistributive effects of public investment in education.

2. The Viewpoint of the State

It was shown in the preceding paragraphs that existing education finance, income and tax policies lead to a situation in which:

(i) the private rate of return to education is high, thus making education a highly profitable venture for private individuals;

(ii) the social rate of return is also positive but lower than the private rate, thus indicating that education is subsidized by society;

(iii) as a consequence, investment in education requires a "net" taxpayers outlay; in other words, public subsidies for education are always superior to the taxes paid by educated people.

This general observation, however, fails to provide any insight on the distributional effect of investment in education between social groups. In this respect, it seems that the only way for the state to introduce equity considerations in the financing of education investment is to relate the amount of "net" subsidy (subsidy minus tax) received by each educated person in a given social group to the proportion of educated people over the total eligible population in this group. Expressed in another way, the average "net" subsidy received by a given social group will be computed by dividing all the "net" subsidies received by all educated persons belonging to the group by the number of eligible persons in this group.

To illustrate this point, two population groups, men and women, are considered below. It can be safely assumed that:

(i) educated men and women usually enjoy approximately the same public subsidy to finance their education in the absence of any special provisions for either sex;[1]

(ii) educated men have a better ability to benefit from a given level of education than educated women: in most societies, male earnings are (sometimes substantially) higher than female earnings; their employment opportunities are also more numerous. As a consequence men's earnings and tax streams over their entire active life are higher than women's with the same level of education.

(iii) The "net" public outlay (subsidies minus taxes)[2] is, therefore, likely to be smaller for each educated man than for each educated woman.

(iv) Howevef, because the number of educated males is usually higher than the number of educated females, the total "net" subsidies reaped by males as a group may be equal or higher than the one that accrue to females. It is higher indeed whenever the ratio of per capita subsidy to educated men and women is lower than the ratio of educated men over educated women.

The above analysis can be carried out for any population groups. An interesting and slightly more complicated case would be that of urban versus rural groups. How do they fare with respect to the "net" public outlay made for their education? Obviously, urban earnings and tax payments are higher than rural ones for the same level of education. But the public subsidy granted through rural education is, in addition, probably smaller than that arising from urban education. Thus, the "net" public outlay on each educated rural person is not necessarily higher than the one made on each urban person. But because the proportion of people with a given level of education attainment is usually much lower in rural areas than in urban areas, the rural population, probably, receives a lower average "net" subsidy than the urban population.

To sum up, the size of the average "net" subsidy to any population group will be a function of (i) the direct subsidy received through publicly financed education, (ii) the tax payments made by

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1/ There might be exceptions to this rule in countries where girls require fewer years of study to complete a given level of education than boys or vice-versa. In those cases, one sex may receive more public subsidies to complete a given level of education.

2/ That is (i) minus (ii).

educated individuals and (iii) the proportion of educated people over the eligible population. Working out the "net" subsidies reaped by the various social groups within a society is the only way to assess the redistributive effects of public investment in education on which an equitable public finance policy towards education could be based.

It is now clear that the inability of human capital theory to cope with the income redistributive aspects of investment in education stems from the fact that it restricts itself to the persons who have invested in their education, thus neglecting those who are out of the educational system. In other words, because it is an "allocative" approach, it concentrates on the returns of the educated groups but does not focus on the relative positions of the various groups as a whole vis-a-vis public investment in education. On the contrary, the "redistributive" approach adopted here emphasizes the relative positions of all men and all women, or all rural and urban persons, educated or not, vis-a-vis public investment in education. It encompasses not only the subsidies that accrue to the educated but also those that are foregone by the uneducated.

The "redistributive" approach has a number of additional advantages over the "allocative" approach when it comes to empirical applications. To be sure, the well-known, technical, shortcomings of rates of return to education will also plague the "redistributive" approach but their consequences are, it seems, less serious.

A first example is provided by the fact that both approaches ignore the non-economic (psychic) returns from investment in education. However, this appears to be a much more serious shortcoming when rates of return are to be used as guidelines for allocating resources among levels and types of education or even among education and other types of investment than in the redistributive approach proposed here. In the former case, the underlying assumption is that the psychic returns, also referred to as the consumption benefits of education, are either equal to zero or identical for all types of levels of education and all types of public investment. In the latter case, it is proposed to compare the economic returns from the same level of education across various social groups. This implies that the psychic returns, although still unknown, are identical for all social groups for a given level of education. Admittedly, this is still an arbitrary assumption but less provocative however than to equate all psychic returns from various types of public investment.

The same observation can be made in connection with the externalities of education. Obviously, the subsidy minus tax criterion used in either approach to measure them is inadequate. But the consequences are far more serious when the purpose of the analysis is to allocate more (or less) money to (a given type of) education than to redistribute public funds across income groups competing for the same level of education. In the former case, it is necessary to make assumptions about the value of externalities for each type and level of education; in the latter case, it is assumed

that externalities arising from investment in a given level of education should be the same regardless of the social groups enrolled.

Similarly, the traditional assumptions of rates of return calculations regarding the relationship between education and income, the fact that the age-education-earnings structure remains unaltered and that existing earnings differentials in favor of educated people are an adequate proxy for their contribution to economic growth, appear to be less provocative in a redistributive context. For instance, the bias resulting from the difficulties of isolating the pure effect of education on earnings because of the existing intercorrelations with other factors such as ability is more dangerous when assessing the exact returns from education in order to compare them with the returns from other investments than when focusing on the comparison of the returns from, say, secondary education between males and females. In the latter case, the bias will be identical in both groups. Similar remarks can be made in connection with the other simplifying assumptions usually accepted by human capital practitioners.

It is correct to say that hardly any empirical evidence is available to substantiate what is, after all, nothing but a model to test the long-run impact of the financing of education on the social fabric in LDCs. This is a regrettable state of affairs because it is highly likely that education per se has an adverse effect on income distribution in many LDCs simply because educational opportunities are unequally distributed among socio-economic groups. These disparities in educational opportunities result, other things being equal, in unequal subsequent economic opportunities. In other words, high-income groups are enrolled in a given level of education in greater proportions than low-income groups. Consequently, average earnings in the former group will be enhanced through education to a greater extent than in the latter. From the policy-maker viewpoint, however, the problem is not so much to argue about this trend, but, rather, to check if public policies concerning the financing and pricing of education in the broadest terms endorse or counteract it.

VI. Public Versus Private Education Finance: The Equity-Efficiency Quandary

The purpose of this section is to describe the implications of various mixtures of public and private finance for educational efficiency and equity. In most countries, the private education sector, in which the fees paid by the students or their families are the single most important source of income of educational institutions, coexists with the public sector whose main source of finance is the taxpayers. Furthermore, it is commonly acknowledged that both sectors also differ on efficiency and equity grounds, meaning by efficiency their performance in terms of costs and by equity their ability to enroll a socially unbiased cross-section of the eligible population.

In this respect, publicly financed education is often associated with low cost, socially unbiased education while the intended or unintended role of privately financed education would be to cater the more sophisticated educational needs of a social elite. To what extent do these cliches reflect actual situations? What does the coexistence of public and private education imply for social equity and economic efficiency?

The approach adopted here is a deliberately agnostic one. No attempt will be made to speculate whether education should be a private business priced to consumers at its full cost (as advocated by Milton Friedman) or whether education should be wholly financed by taxpayers as advocated by most public education establishments throughout the world. This approach is based on the fact that there is a de facto coexistence of private initiative and public ownership in the education business and that this coexistence raises a number of problems concerning the respective role of each sector and their coordination.

1. A Review of Current Assumptions

Very limited statistical evidence is available on the various, intertwined, relationships between the financing of education, its costs and the equity issue. Perhaps this is why the debate is still largely confined to the realm of politics, leaving little room for positive debating. An attempt to review the usual pros and cons in connection with the public versus private education debate will be made below.

a) The influence of education finance on unit costs

A convenient starting point is to ask oneself whether any existing or proposed system of education finance includes incentives to save on unit costs. In this respect, the publicly supported education sector is usually credited with large economies of scale which result from standardized building practices, mass purchases of equipment as well as a more rational allocation of educational facilities thanks to comprehensive planning. On the contrary, the privately financed sector is, supposedly, in a better position to achieve a better utilization of resources, both physical and personal, and to promote more competition between educational institutions. Thus, each sector has arguments of its own that lead or should lead to low unit costs.

However, things do not look so clear-cut in practice and the various suggestions currently made to improve the efficiency of educational services are not specifically linked with any particular system of finance. For instance, it is sometimes suggested that school buildings should not remain unutilized during part of the day or the calendar year in order to save on unit costs. The question is

now to decide under which system of finance, public or private, is this suggestion most likely to be put into practice. A similar observation could be made in connection with the utilization of the teaching body. In both cases, it is sometimes claimed that the private education sector, being more cost-conscious, will be more responsive to what is afterall little more than common sense. It is, for instance, argued that teachers'pay could more easily be geared to their performance in the private sector than in the public sector in which the civil service tradition of an "administrative" salary structure prevails.

However, available statistical evidence fails to support this view. There seems to be no systematic advantage of the private sector over the public sector in terms of unit costs. In the first place, hardly any obvious difference concerning the use of school buildings is noticeable. It seems on the contrary that a very similar situation, which depends largely on a number of hard-dying educational traditions concerning the length of the school day and of the school year, prevails for both sectors in a given country. As far as teachers are concerned, attempts to introduce "merit pay" are still very scarce and the private sector has failed to take advantage of its greater freedom to put itself systematically ahead of the public sector on this ground. As a result, the differences observed in unit-costs per pupil-year are not clearly related to the source of finance. In the United States for instance, unit costs in the private higher education sector are approximately 40 percent higher than in the public higher education sector[1] while, in Japan, public higher education is four times as expensive as private higher education.[2] In Colombia, unit costs in public universities are more than twice as high as in private universities[3] while, in Mexico, they are lower in the public sector than in the private sector at the primary and secondary education levels.[4] In many Asian countries, private education is the low-cost sector, thus following the Japanese "model" mentioned above.

All in all, it can be said that the differences observed in unit costs are not clearly related to the source of finance. Both public and private education can be high-cost or low-cost education according to the country considered. Since the Japanese "model" of low-cost private schools is also characterized by a large proportion of students enrolled in the private sector, a safe rule of thumb is to assume that the low-cost sector is usually the more important one in terms of enrollments while the high-cost sector is quantitatively less developed.

1/ See Table 1 in "Optimal Investment in College Instruction: Equity and Efficiency", Theodore W. Schultz in Journal of Political Economy, Volume 80, No. 3, Part II, May/June 1972.

2/ See Techniques of Educational Finance and Their Implications for Policy, DAS/EID/ 71.71, OECD (mimeographed).

3/ See Reforma de la educacion superior. Documentos de estudio, Instituto Colombiano para el Fomento de la Educacion Superior (ICFES), Bogota, 1971.

4/ See Estudio sobre las escuelas particulares del Distrito Federal by Carlos Munoz I. and Manuel I. Ulloa, Centro de Estudios Educativos, Mexico, 1966, Chapter 5, Volume I.

The influence of the system of finance on unit costs might also exert itself through the internal efficiency of educational systems. Here too, it is sometimes contended that private initiative is in a better position to promote internal efficiency than public ownership. Should private education be credited with systematically lower drop-out and repeating rates and, therefore, with higher promotion and graduation rates than public education? Data to support this view are lacking although at least one study, carried out in the Federal District of Mexico, seems to confirm this hypothesis.1/ It was, in effect, found that, while the costs per pupil-year are lower in public primary and secondary schools than in their private counterparts, the costs per graduate are lower in the private sector because of its lower attrition rate.

Other suggestions to improve internal efficiency of education systems have been made in connection with new methods of education finance. For instance, student loan schemes are credited with a positive impact on repeating rates on the ground that they contribute to develop a more acute cost-consciousness among students. This might be true to the extent that loan schemes result in an increase of private finance in total costs but this is far from being a general rule as it was shown in Section IV of this paper. Moreover, assuming that student borrowers repeat less than nonborrowers, it is far from clear whether this is due to their greater dedication to work or, rather, to the fact that repeaters are usually no longer eligible for loans. If the latter hypothesis is true, then improvement in efficiency have little to do with student loans per se and could also be achieved with any system of finance that includes a provision saying that financing will be available only to nonrepeaters. It could be decided, for instance, that repeaters are not eligible for grants or even for tuition-free education.

To sum up, it is very hard to assess the influence of a given system of education finance on unit costs. Unit costs are said to be very sensitive to the quality of education and it might well be that the differences in unit costs between public and private education reflect nothing but differences in the quality of education provided by each sector.

b) Education finance and the quality of education

Any discussion on the costs of public versus private education implies implicit or explicit assumptions about the quality of education in each sector. The trouble, however, is that nothing is more subjective than educational quality and all the attempts made so far to provide measurable index of quality - though the use of tests for instance - have proven far too narrow when evaluated against the many objectives that education is supposed to fulfill. However, this may not be a definite stumbling block to the extent that the problem is not so much to provide an accurate measure of quality per se but, rather, to determine which type of education is most rewarded by society. It is a

1/ See Estudio sobre las escuelas particulares del Distrito Federal by Carlos Munoz I. and Manuel I. Ulloa, Centro de Estudios Educativos, Mexico, 1966, Chapter 5, Volume I.

fact that, while nobody agrees on a standard definition of quality, societies manage perfectly to establish a ranking between various types of education. Whether right or wrong, society's judgements on the quality of education are even more important than an always debatable definition of quality because they carry different rewards in terms of career prospects, money, status and the like and because these rewards may turn out to be decisive incentives for parents or students to choose for any given type of educational institutions.

Does the quality of education differ according to the financing system under which it is provided? It is highly probable if one listens to the various arguments currently brought forward in the debate. On one hand, the supporters of privately financed education develop the same reasoning as before, i.e., private initiative favors competition the stimulus of which is important for the quality of educational services; it also ensures that education is more clearly geared towards the actual needs of students and society. On the other hand, proponents of public education emphasize the socializing aspects of education - which, incidentally, are seldom considered by standard testing practices - and its value-forming functions; they stress the fact that a common educational experience is a unique opportunity to bring together all segments of society.

In many Western countries, the privately financed sector is believed to provide a "better" education or, at least, an education with a better "label" than the publicly supported sector. The situation might be different in some Asian countries, such as Japan, where the prestigious sector is the public one. In order to reconcile these two a priori opposite worlds, it can be said, as a general rule, that the sector which is least developed in terms of enrollments is in a better position to perform what has been called a "screening and labelling" effect on the student population, and this, regardless of whether it is privately or publicly financed. On the contrary, the "mass" education sector, whether public or private, is bound to be considered, rightly or wrongly, as the provider of second-best education. The fundamental logics behind this conclusion is that the quality of education as perceived by a given society may have as much to do with its scarcity as with the system of finance.

The foregoing discussion does not take into account the possible variations in the quality of education within the public sector or the private sector. Very large variations in the quality of education may be found within the public education sector, especially if it is quantitatively well developed. In the same way, private schools do not necessarily provide the same uniform education. In many Latin American countries, the private sector does include very good schools as well as parochial schools, mainly located in rural areas, which provide a rather low-quality education. The crux of the matter, however, is to what extent these differences in quality are

perceived by the labor market and society as a whole and whether they are given more importance than the differences associated with the system of education finance.

c) Education finance and educational opportunity

It was suggested in the foregoing paragraphs that variations in the mix of public and private finance are often associated with variations in unit costs and in the quality of education.1/ The question is now to assess to what extent the various socio-economic groups are randomly distributed among the various types of education finance so that all of them may take advantage of the high-cost or high-quality education in the same proportions.

At first glance, it can be said that private educational institutions are more likely to enroll students from higher socio-economic groups who can afford the fees charged by these institutions. However, three qualifying remarks need to be made here: first, a vigorous student aid policy could help "poor" students to meet the costs of studies in such institutions. Second, private schools may draw a significant part of their income from donations, which allow them to charge below-cost fees. Third, private schools may manage to charge very low fees either because they are very efficient or because they provide a low-quality education.

The United States is an example of a country which has gone very far in developing a privately-financed higher education sector and, at the same time, in helping the less privileged students to get entry in this sector. This policy, however, has not managed to suppress the persistent over-representation of high-income students in the private, high-fees, universities as examplified in the following table.

1/ Some may argue that a "good" education is always expensive (and vice-versa) and, therefore, that there is no need for considering both unit costs and quality. Such a statement contradicts numerous research works which have emphasized the rather loose link between costs or expenditures (inputs) and the quality of education measured by tests (output). However, the tendency of many societies to reward expensive education in a favorable manner sometimes without positive "quality control" cannot be dismissed out of hand.

This is why it is safer to consider both costs and quality when analyzing different types of education finance.

Distribution of Enrollments According to Family Income and Type of Universities (U.S.A.)

	Under 3,000	3,000 to 4,999	5,000 to 7,499	7,500 to 9,999	10,000 to 14,999	15,000 or More	Total
Type of University							
Public	57	69	60	66	56	46	58
Private	33	27	34	30	40	50	37
Not reported	11	4	7	5	4	4	5
Total	100	100	100	100	100	100	100
Level of Fees							
Under $250	37	35	31	28	25	19	27
$250 to $499	23	37	30	38	31	27	31
$ 500 to $999	18	16	17	13	16	15	15
$1000 or more	13	9	15	17	24	34	21
Not reported	11	4	7	5	4	4	5
Total	100	100	100	100	100	100	100

Source: Roger E. Bolton, "The Economics and Public Financing of Higher Education: an Overview" in the Economics and Financing of Higher Education in the United States, A Compendium of Papers submitted to the Joint Economic Committee, Congress of the United States, United States Government Printing Office, Washington, 1969.

In the developing world where private sources of finance other than fees are scarcer and where student aid polices are usually less developed than in rich countries, it is highly probable that the preference of the higher strata of society for high-cost and, possibly, high-quality education will be even more clearly noticeable. A case in point is Colombia where 40 percent of the student body of two private universities[1] had parents with a university education as against 19 percent in the largest public university.[2] At the other extreme, 15 percent of the student body in these private universities had parents with primary

1/ University Los Andes and University Javeriana, both located in Bogota.
2/ National University which enrolls one fourth of the Colombian student body.

education or less as against 35 percent in the public university.[1/] At the secondary education level, the over-representation of the higher strata of society in the privately financed sector increases steadily with family income as shown in the following table:

Distribution of 12th Grade Students
According to Family Income and Type of School, 1971

(Percentages)

Monthly Income in Pesos	Public Schools	Private Schools
0 - 1500	64	36
1501 - 3000	47	53
3001 - 4500	36	64
4501 - 6000	25	75
6001 - 7500	21	79
7501 - 9000	13	87
9001 -12000	12	88
12001 or more	17	83
Total	43	57

Source: Unpublished data from the National Testing Service, ICFES, Bogota, 1971.

The two above examples[2/] seem to confirm that the privately financed education sector has a natural tendency to be biased against the lower strata of society who have no other way than to enroll their children in the public school system. While the division of the student body into two separate sectors according to wealth can be considered as socially divisive, it also raises serious questions of equity and efficiency whenever it is associated with differences in unit costs or in the quality of the education provided in each sector.

1/ Admittedly, parents education is not an indication of wealth as precise as family income, although it is often safer. The data are drawn from "La Universidad Nacional" in Boletin Mensual de Estadística, No. 230, DANE,, 1971.

2/ Unfortunately, very few countries are able to provide statistical evidence similar to that of Colombia. A good substitute for such data would be to compare locations of private schools versus public schools on a school map for instance.

2. The Cost-Finance-Equity Quandary

Sociologists and educational psychologists are used to saying that education is a joint product of home, environment and school. If this is true, it should be easy for educational institutions to bring children with a favorable socio-economic background at a given level of educational achievement simply because, for these children, a significant part of the educative process takes place out of school. On the contrary, the lacking or even adverse influences of home and environment on under-privileged children are bound to make more difficult and more costly that part of the educative process which takes place at school.1/

In such a context, equity obviously commands that high-cost or high-quality education go primarily to under-privileged groups if initial socio-economic differences are not to be maintained and aggravated in the future. This view is usually criticized on efficiency grounds. It is argued that, if society wants to make a sound investment in education, educational opportunities should be distributed to those who are most able to get advantage of them, that is according to ability.

The trouble, however, is that ability is a concept which is just as elusive as education quality2/. So far, it has proved impossible to draw an undisputed line between innate or genetic ability and ability created by the socio-economic environment. As a result, measures of ability are often correlated with index of socio-economic bakcground and the allocation of educational opportunities on the basis of ability would inevitably run against equity.3/

1/ These statements are not new. They contributed to give impetus to ideas that goes as far back as the end of the 19th century: it was believed then that only an educational experience common to all children would have the power to erase initial differences in socio-economic backgrounds. This optimism about the power of schools as a corrective factor of initial social disparities has been questioned in modern times by numerous studies.

2/ It is so elusive that few policy-makers are willing to take decisions on financing on the sole ability criterion. For instance, tuition-free education is usually provided to everybody, including to repeaters, and not only to the so-called able students because it is believed that the lack of ability is, partly, the result of an under-privileged socio-economic background.

3/ It is sometimes believed that it is easier to separate out socio-economic background from ability at the higher levels of the educational system than at the lower levels because past school performance is supposed to reflect only innate ability. Right or wrong, this belief provides a rationale for treating the various levels of education differently, i.e., for considering ability as an acceptable criterion to allocate educational opportunities at the higher levels only.

The debate has been going on for some time and, in all likelihood, will not be solved overnight. The only undisputable fact is that the coexistence of various mix of public and private finance in the educational field makes possible the provision of educational services whose costs and quality differ according to different types of social clientele. Furthermore, the distinctive "labels" resulting from a private or public education background may be exaggerated by the misfunctioning of the labor market and result in subsequent disparities of economic opportunities. Such a state of affairs may have strong and adverse implications on long-term equity while the gains in terms of efficiency are still open to question.

VII. Concluding Remarks

It is by now clear that the single most important issue in the field of education finance is to determine at each educational level the "best" mixture of public and private finance for each population group within society. Such an endeavor involves considerations of efficiency and equity which may or may not conflict. This being said, systems of education finance are complex and cannot be altered overnight. They have also proved to be extraordinarily rigid and sometimes, submitted to historical traditions which, however respectable, have little to do with present situations. Most proposed changes in existing systems are bound to have first only a marginal importance but their consequences in the future may be substantial. While the externalities attached to education remain a major stumbling block on the road towards the positive measurement of efficiency in education spending, the equity aspects of the problem are easier to specify. Furthermore, they are an indispensable detour on the road towards a comprehensive assessment of efficiency in education spending.

However, in both cases, the policy-maker is faced with an almost total ignorance about even the mere description of existing situations not to mention alternative directions of action. Most developing countries simply do not know what kind of redistributive effect their public expenditures on education have on incomes. Student aid policies are current practice but no evaluation of such policies has ever been carried out: their assumed effect on the price and the demand for education or on equality of opportunity result more from theoretical hypotheses than from empirical evidence. The fact that, in the education sector, private initiative coexists with public ownership has led to some academic debate but the hard evidence on the performance of the private sector is still missing. This is a rather puzzling situation in a context of shortage of public funds for education. As to the long-run potentialities of education finance to alter the economic positions of the various socio-economic groups within society, they are simply disregarded.

All in all, the financing of education is still a largely unexplored territory in which opportunities for research and experimentation appear to be large and worth a substantial investment in terms of both thinking and data collection.

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